FISH-EYE HD-SDI CAMERA, 5 MEGAPIXEL

ART. HDCAM360A

Please read this manual thoroughly before use, and keep for future reference

Via Don Arrigoni, 5 24020 Rovetta S.Lorenzo (Bergamo)

http://www.comelitgroup.com e-mail: export.department@comelit.it

SAFETY PRECAUTIONS

Please read before using

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of insulated dangerous Voltage within the product's enclosure that may be sufficient magnitude to constitute risk of electrical shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Please read the service manual in details before using.
2. Don't try to disassemble the chassis or the part easily, in case that touch the power by mistake, is shocked by electricity the danger or caused inside parts to be damaged,
3. Do not attempt to service this unit yourself unless you are authorized to do so. Opening cover may exposure you to dangerous voltage or other hazards. Refer all servicing to qualified personnel only.
4. When being regular, please lock the parts firmly first to prevent the machine damage.
5. Please connect correctly in accordance with the regulation, prevent the machine from using, or striking improperly.
6. Please don't use any organic solution or the corrosively sanitizer to insert and wipe away the chassis outside. While inserting and wiping away, please turn off the power, and use the clean cloth is stained with letting a small amount of branch water, insert and wipe away appearance.
7. Please don't use the camera under the following abominable environments: temperature is lower than –10℃ or is higher than +50℃.

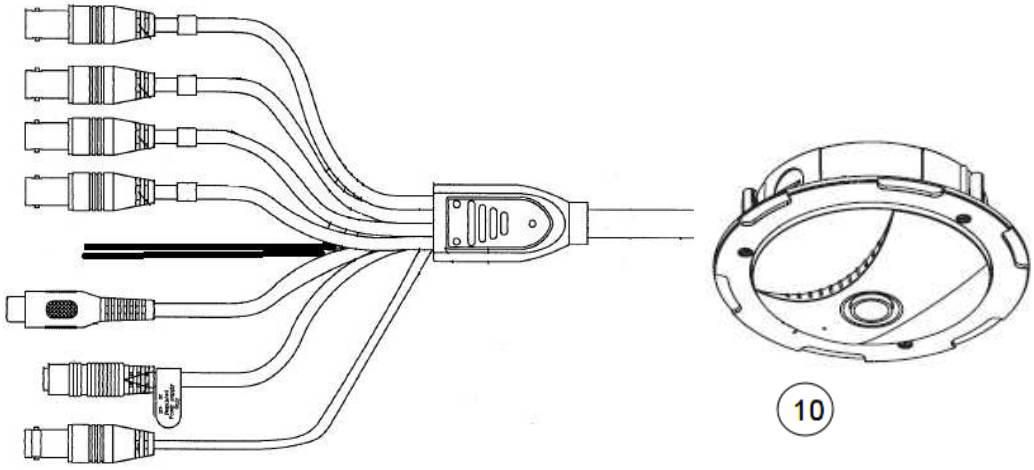
Product Feature

1. HD CCTV 5 Mega Pixel.
2. SDI output.
3. HDMI output.
4. CVBSx4 output.
5. 360°and 180°panorama view.
6. Virtual PTZ function.
7. Auto Pan Function.
8. Multiple screen display.
9. Privacy mask.
10. Motion tracking.
11. Built-in microphone.

Specifications

Model		360° panoramic camera
Signal System		NTSC or PAL
Pick up device		1/3.2” Color CMOS QSXGA (5Mega Pixel : 2592x1944) image sensor
Synchronizing		Internal
Scanning System		2:1 Interlace
S/N Ratio		More than 51dB
Electronic Shutter		x3; x2; x1; AUTO; 1/100; 1/120; 1/250
White Balance		Auto
Angle of view	Diagonal	185°
	Horizontal	185°
	Vertical	185°
Gamma Correct		0.45 / 1
RS485		PELCO D / 9600
Video Output		4 channels CVBS / HDMI / SDI
Lens Type		Board lens 1.19 mm / F2.0
Format		1080p
Power Source		12 VDC jack ± 10% / 1A
Power Consumption		6.6 W (max)
Current		550 mA (max)
Operating Temperature		-10℃ ~ 50 ℃ (14℉ ~ 122℉)
Storage Temperature		-20℃ ~ 70℃ (-4℉ ~ 158℉)
Dimensions (H x ø)		78.82 x 145 mm 78.82 x 190 mm

Connections:

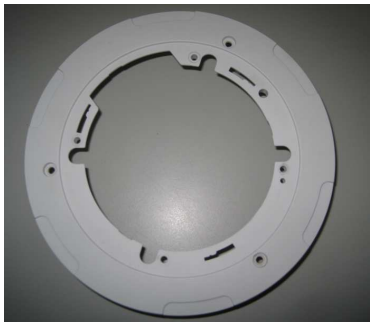


1	label **1**	Camera 1 CVBS (BNC) output
2	label **2**	Camera 2 CVBS (BNC) output
3	label **3**	Camera 3 CVBS (BNC) output
4	label **4**	Camera 4 CVBS (BNC) output
5	RS485 cable	Purple **+** / White **-**
6	RCA cable	Audio output to speaker or DVR audio input
7	Power cable	12 VDC jack
8	SDI cable	SDI connector output (**BNC gold color**)
9	HDMI connector	HDMI output to connect to a HDMI monitor
10	Microphone	Pinhole type microphone built in

Package contents

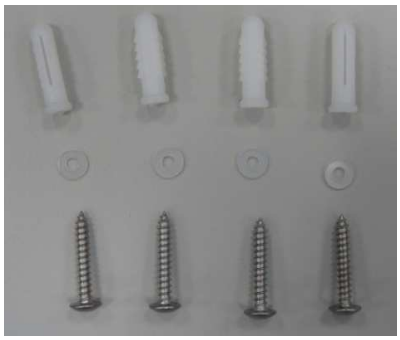
Camera

Ceiling cover



Ceiling screws

Wall screws



This 360° camera can be installed into different co nfiguration thanks to its rich connection. You will have an overview of different scenario in the next pages.

A) Scenario without DVR

1. The camera uses the SDI connector output or the HDMI connector to a HD-SDI monitor that has RS485 built in connector.
   The user points the remote controller to the monitor and controls the camera

2. The camera uses the SDI connector output or the HDMI connector to a HD-SDI monitor that doesn't have RS485 built in connector.
   The user link the 2 RS485 wires from the camera to a keyboard controller

B) Scenario with DVR

1. The DVR only supports SDI signal input

   The camera used the SDI connector output to the DVR SDI input
   The user link the 2 RS485 wires to the RS485 terminal of the DVR
   The DVR uses the HDMI connector output to a HDMI monitor
   The user controls the camera with the mouse or the remote controller of the dvr

2. The DVR doesn't have SDI signal input and only accepts analog signal

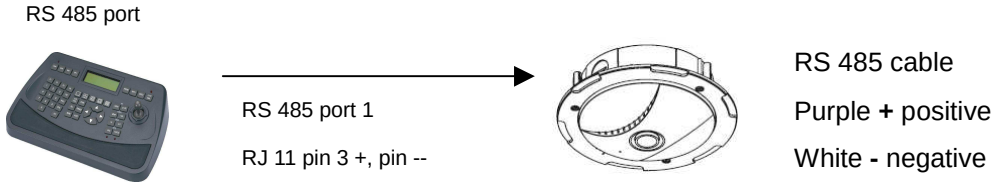
   The camera uses the 4 BNC connector output to the 4 video input of the DVR.
   The user can't access to the 180° and 360° view

3. The DVR can accept both SDI and analog signal

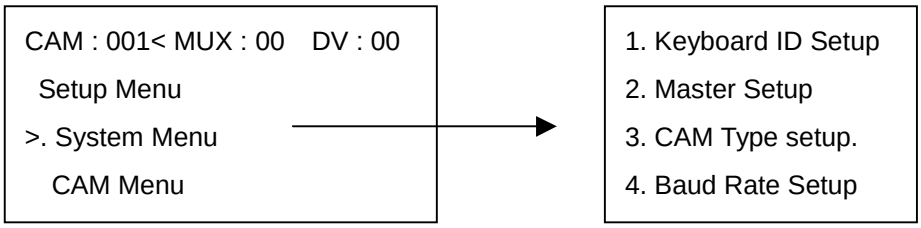
   The camera uses the SDI connector output to the DVR SDI input
   The camera uses the 4 BNC connector output to the 4 video input of the DVR
   The user links the 2 RS485 wires to the RS485 terminal of the DVR or to the RS485 terminal of the keyboard controller

RS485 connection with keyboard

The 360° camera is set in protocol PELCO-D and baud rate 9600.
User can use keyboard, DVR or any RS485 device to control 360°camera.
Ex.: Keyboard



How to setup connection between keyboard and camera
Press MENU button of keyboard for function setup



Using direction key to select system menu and then press ENTER to get in.
Follow below setting and ready to control camera with command.

1. Keyboard ID Setup: press ENT → press 1 → press ENT → ESC
2. Master Setup: press ENT → press 1 → press ENT → ESC
3. CAM Type Setup: press ENT → choose protocol 5: PELCO-D → press ENT → ESC
4. Baud Rate Setup: press ENT → choose Baud Rate 1: 9600 → press ENT → ESC
5. Press “ESC” to exit menu.

Note: if you are using others keyboard brand, please make sure the protocol setting is on **PELCO-D** and baud rate **9600** and the control command is same as usual.

Command:
the default screen mode is 5. It displays in 5 windows (quad + 360°view)
Camera 1 ~ 4 is a virtual split from 360°screen. U ser can control camera 1~4

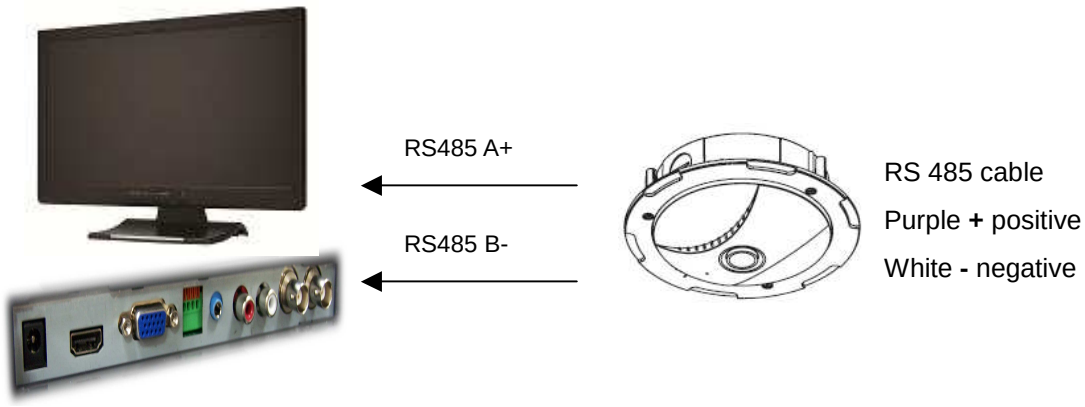
like PTZ dome to do Up / Down / Left / Right movement.

Controls on screen in mode 5:

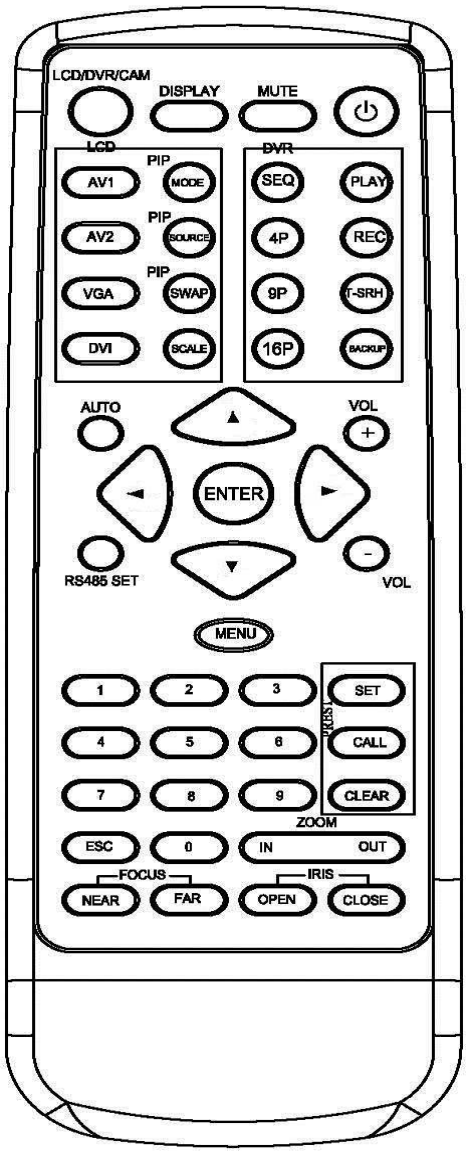
1. Press 1 + CAM to call camera 1 and after use joystick to move.
2. Press 2 + CAM to call camera 2 and after use joystick to move.
3. Press 3 + CAM to call camera 3 and after use joystick to move.
4. Press 4 + CAM to call camera 4 and after use joystick to move.

Get in menu:
press 95 + PRESET to call menu. Use joystick to select items.
Up / Down for item chooses, Right to enter in sub items.

RS485 connection with Monitor with RS485 built in



RS485 remote controller



Before to control the device, please set the RS485 parameters. Press RS485 set button into RS485 menu.

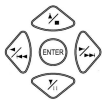
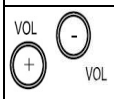
Press LCD/DVR/CAM to change control mode

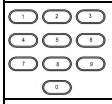
LCD mode:
user operates the function by remote control. See LCD key define

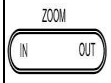
DVR mode:
user operates the function by remote control. See DVR key define

PTZ mode / 360°mode:
user operates the function by remote control. See Cam key define

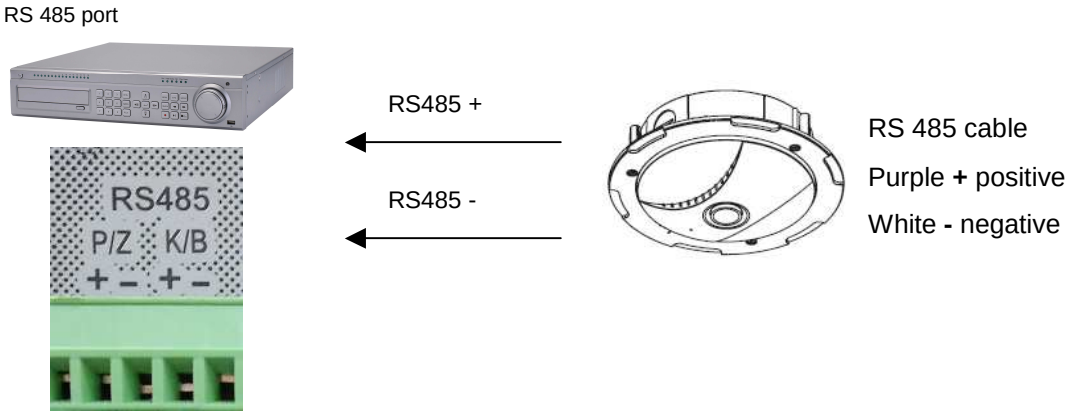
Remote controller key define

Key	Define
	LCD power ON / OFF
	RS485 menu setup
	LCD / DVR / CAM OSD item select Up / Down / Left / Right key DVR playback status
	LCD / DVR / CAM control mode switch
	Call desire LCD / DVR / CAM Device Menu
	Displays the LCD source information
	LCD volume setup
	LCD audio soundless
	VGA mode auto adjust
	Quit desired DVR OSD setup or number wrong typing
LCD	
	Direct select the AV1 source input
	N/A
	Direct select the VGA source input
	For HDMI
	Jump to Picture in Picture screen display
	Picture in Picture screen source selection

	Picture in picture screen source exchange
	Picture ratio selection: Under / Full / Over
DVR	
	Channel sequence
	Quad screen selection
	9 split screen selection
	16 channel selection
	Jump to playback mode
	Manual recording
	Jump to time search of playback mode
	Jump to backup mode
CAM (P/T/Z dome; 360° mode)	
	PTZ dome ID selection / Set, Call, Clear Preset DVR full channel selection
FOCUS	
	PTZ dome's lens in manual focus
	PTZ dome's lens in manual focus
IRIS	
	PTZ dome's lens in manual Iris
	PTZ dome's lens in manual Iris

ZOOM	
	Control PTZ dome's lens zoom in and out
PRESET	
	Set a Preset point
	Call a Preset point
	Clear a Preset point

RS485 connection with DVR



Protocol configuration:
please go to your DVR RS485 (PTZ) setting. Select the camera and 360°
It depends on which channel SDI is connected. If camera is on channel 1, please make sure the address is from 1 to 4, choose protocol **PELCO-D** and baud rate **9600**.

Please go to your DVR PTZ control mode to start operate 360° camera.

Note: when you are inside the camera OSD, if there is suddenly power shortage, the setting will not be saved in the memory. You must exit the osd or wait the OSD disappears to validate the modified setting in the memory!

Main menu structure

Item	Selection	Description
AE	Submenu	Auto exposure
AWB	Submenu	Auto white balance setting
BRIGHTNESS	1 ~ 9	Picture brightness adjust
SATURATION	1 ~ 9	Picture saturation adjust
MD	Submenu	Motion detection setting
MASK	Submenu	Picture mask zone setting
NOISE REDUCTION	00~09	Picture noise reduction setting
DAY/NIGHT	AUTO/DAY/NIGHT	**AUTO:** means that camera will adjust automatically the mode after a period of time (0, 3, 5, 10, or 15 seconds) **DAY:** means that camera will always be on day mode **NIGHT:** means that camera will always be on night mode (black and white)
SHOW MODE	WALL 0 / WALL 90 / WALL 180 / WALL 270 / DESK / CEILING	Select the desired mode and then press enter button or 94 + Preset (keep press after hear 2 beeps)
PATTERN	Mode 1~Mode 13	Select the desired pattern and then press ENTER button or 94 + Preset (keep press after hear 2 beeps)
SYSTEM	Submenu	System status setup
REBOOT		Will reset the device, just press right arrow to reset
EXIT		Exit the menu

AE submenu

AE	50 Hz / 60 Hz	50 Hz / 60 Hz
	SHUTTER SPEED	x3; x2; x1; AUTO; 1/100; 1/120; 1/250
	Return	

AWB submenu

AWB	AWB	**AUTO:** the system automatically adjusts the auto white balance **OFF:** the auto white balance is disabled
	AWC SET	To enable it, press → direction one time it will adjust the auto-white control in 9 seconds, and the AWB will automatically turn off
	Return	

Motion detection submenu

MD	AREA	ACTION	ON/OFF
		AREA	1~4
		XPOS	0000~1943
		YPOS	0000~1943
		WIDTH	0256~1943
		HEIGHT	0256~1943
		RETURN	
	MODE	ON	
		OFF	
	Return		

MASK submenu

MASK	MASK	MODE	OFF/ON
		AREA	1~4
		XPOS	0001~1943
		YPOS	0001~1943
		WIDTH	0000~1943
		HEIGHT	0000~1943
		RETURN	
	COLOR	1~5	
	TRANSP	1~3	
	RETURN		

PATTERN submenu

PATTERN	MODE1	Camera 1 + 360°view
	MODE2	Camera 2 + 360°view
	MODE3	Camera 3 + 360°view
	MODE4	Camera 4 + 360°view
	MODE5	Quad + 360°view
	MODE6	Camera 1 + Camera 3 + 360°view
	MODE7	See below for more details
	MODE8	180°in 16 :9 display
	MODE9	360°flat
	MODE10	180°+ Camera 3 + Camera 4
	MODE11	180°+ 180°
	MODE12	Quad display
	MODE13	360°display

When you change the pattern mode, you have to wait 10 sec until it change to selected mode. If you want to immediately see the mode please press the ENTER button.

Pattern Mode 7:
in this mode user can choose among 4 different angle of view, each can have horizontal and vertical flexibility range

View available	120°	140°	160°	180°
Verticale range	-5 → +5			
Horizontal range	-5 → +5	-3 → +3	-1 → +1	0

SYSTEM submenu

SYSTEM	CAMERA1	ON / OFF
	CAMERA2	ON / OFF
	CAMERA3	ON / OFF
	CAMERA4	ON / OFF
	LOAD DEFAULT	Will reset the device to factory default
	RETURN	

Command list

For camera 1 to 4 it is possible to define 3 Preset points that will be use for the Preset Cruise (76 + Preset) and the Preset Sequence display (66 + Preset)
To define Preset 1 on camera 1:
Call camera 1
Select your preset view by adjusting with the joystick
Press 1 then press PRESET button 3 sec until you hear a bip (OSD will display on screen **POINT1**)
(Setting may differ from the type of RS485 device you are using)

Same for the other preset
Call Preset 95: displays the menu of the 360° camer a

Call Preset 94: will apply immediately the selected mode

Call preset 93: after you selected your desired mode and that you position the view of the camera, you can save the current view by calling Preset 93. OSD will display on screen **SAVE**

Call Preset 76: run the auto pan function. OSD will display on screen **TOUR**
This function is also available on the keyboard by pressing directly AUTO PAN hot key. In this mode the motion detection will be disabled

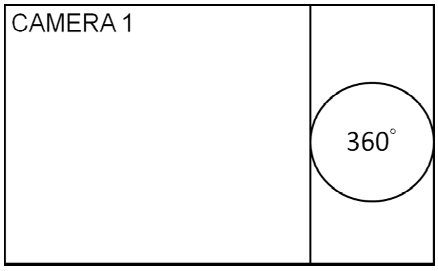
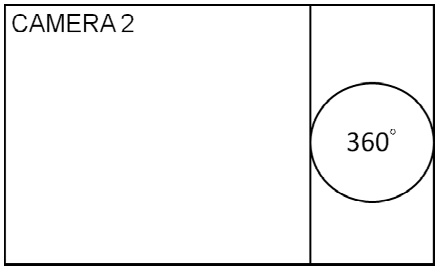
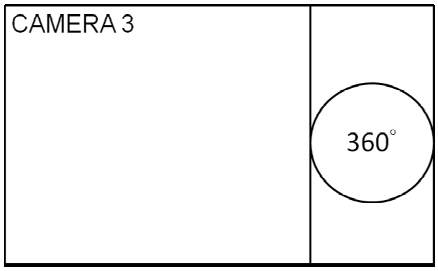
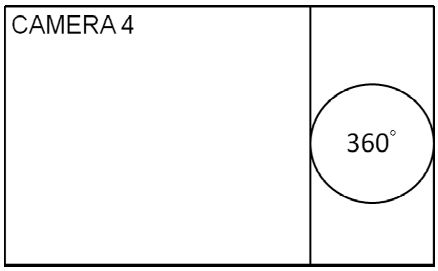
Call Preset 66: displays each preset without transition. Ideal for preset whose distance is very long. In this mode the motion detection will be disabled. OSD will display on screen **SCAN**

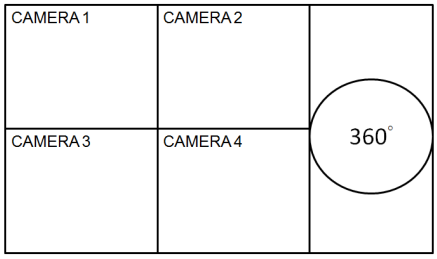
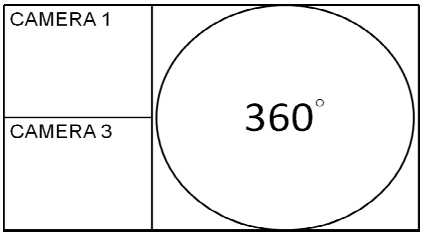
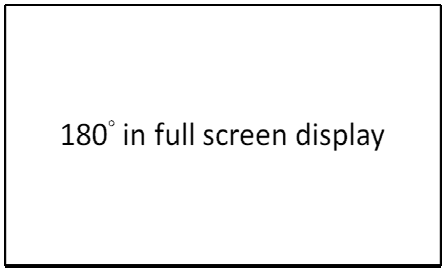
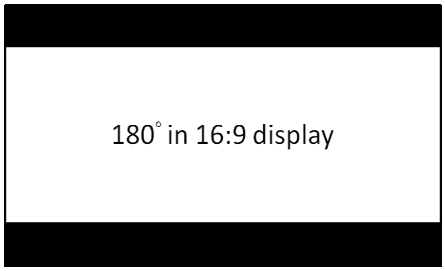
Motion detection and tracking

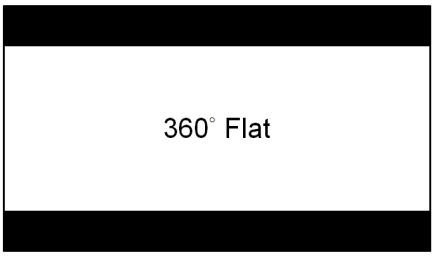
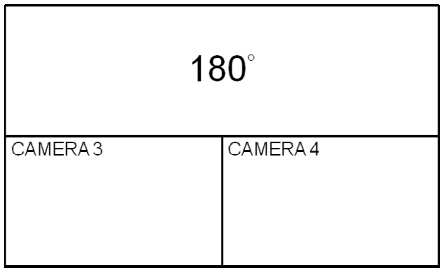
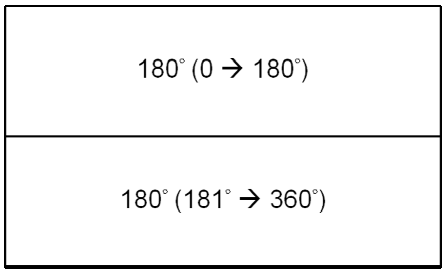
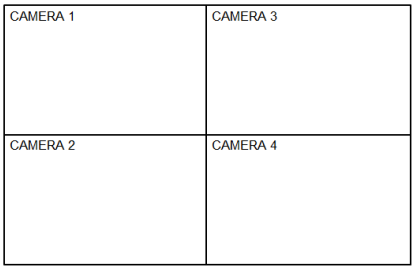
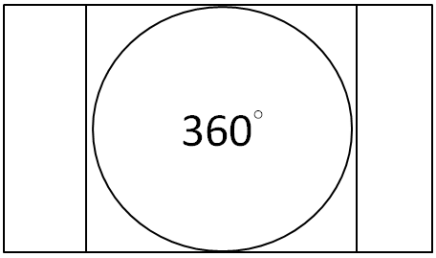
This camera has a motion detection feature and tracks a moving object in the field of view. For configuration without dvr it can be a good alternative for live monitoring

Due to the high level of processing for the CPU, it can be activated on one channel only.
It doesn’t apply for 180° and 360° view.

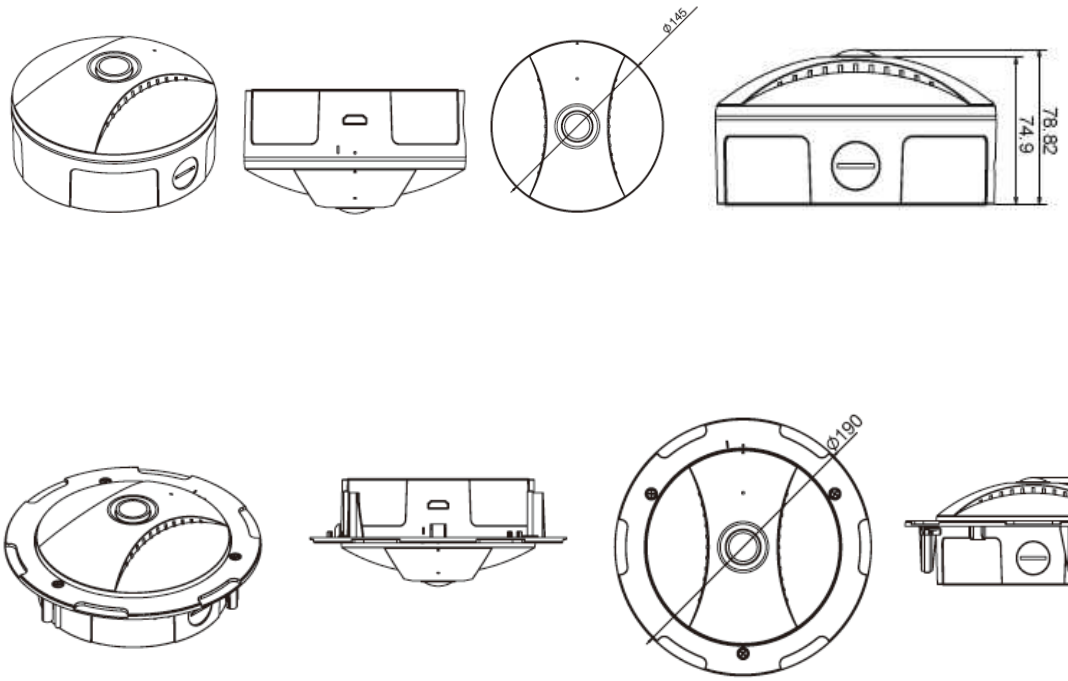
Pattern description:

PATTERN	Preset cruise	Preset sequence	Motion tracking
MODE 1 	yes	yes	yes
MODE 2 	yes	yes	yes
MODE 3 	yes	yes	yes
MODE 4 	yes	yes	yes

PATTERN	Preset cruise	Preset sequence	Motion tracking
MODE 5 	yes	yes	yes
MODE 6 	yes	yes	yes
MODE 7 	no	no	no
MODE 8 	no	no	no

PATTERN	Preset cruise	Preset sequence	Motion tracking
MODE 9 	no	no	no
MODE 10 	yes	yes	yes
MODE 11 	no	no	no
MODE 12 	yes	yes	yes
MODE 13 	no	no	no

Dimensions



Via Don Arrigoni, 5 24020 Rovetta S.Lorenzo (Bergamo)

http://www.comelitgroup.com e-mail: export.department@comelit.it